

## APPENDIX D

### POLICY REVIEW OF THE ITS PRIORITY CORRIDORS: EXECUTIVE SUMMARY

# TABLE OF CONTENTS

<b>A. INTRODUCTION</b>	D-3
Priority Corridors Purpose and History	.D-3
Report Purpose, Objectives and Scope	.D-3
The Evolving Intent of the Priority Corridors Program	.D-3
<b>B. SUMMARY OF INDIVIDUAL CORRIDORS</b>	D-4
Corridor-Specific Findings and Observations	.D-4
Houston Corridor	D-4
Southern California Corridor	.D-5
Gary-Chicago-Milwaukee Corridor	.D-6
I-95 Corridor	D-7
<b>C. SYNTHESIS OF EXPERIENCE</b>	D-8
Corridor Comparisons and Issues	.D-8
Corridor Similarities and Differences	.D-9
Cross-cutting Lessons	.D-9
Corridor Challenges	D-9
Demonstrating Value of Regional Institution Building	.D-9
Demonstrating the Benefits of Systems Integration and Deployment	D-11
Demonstrating the Value-Added Synergies Inherent in Regional Systems	D-12
Instilling Regional Leadership and Maintaining Momentum	D-12
<b>D. POLICY IMPLICATIONS</b>	D-12
The Role of the Priority Corridors in Inter-regional vis-a-vis Intraregional Deployment	.D-13
The Role of the Priority Corridor Program in Implementing Architecture and Standards	.D-13
The Role of the Priority Corridors in Promoting Efficient Technology Transfer	D-13
The Role of the Priority Corridors Program within ISTEA	D-14

## LIST OF TABLES

Table 1. Comparative Description of the Four Priority Corridors Along Key Corridor Dimensions	D- 10
Table 2. Key Institutional Issues in the Four Priority Corridors	D- 11

## **EXECUTIVE SUMMARY**

### **Policy Review of the ITS Priority Corridors**

#### ***A. Introduction***

##### Priority Corridors Purpose and History

The ITS Priority Corridors Program was established in the Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991, which included the Intelligent Vehicle Highway Systems (IVHS) Act (now called Intelligent Transportation Systems, or ITS).<sup>\*</sup> The IVHS Act called for the establishment of several priority corridors according to a number of specific criteria set out in the act, with the controlling ISTEA criterion indicated as severe or extreme ozone non-attainment. Subsequent to the passage of ISTEA, the Department of Transportation selected the only four areas in the country meeting all of the criteria as Priority Corridor Sites. The following are the four Priority Corridors: I-95 (Maryland to Connecticut), Houston, Gary-Chicago-Milwaukee, and Southern California. Beginning in 1993, these four Priority Corridors have developed a range of plans, approaches, and activities.

##### Report Purpose, Objectives and Scope

The purpose of this review is to assist the Federal Highway Administration (FHWA) in understanding and assessing the value of the ITS-funded activities in the four Priority Corridors. During the study period (June 1 to July 15, 1996), the research team reviewed major documents from each Priority Corridor and interviewed over 30 stakeholders associated with the Priority Corridors Program. Most of the data and status of projects included in this report are as of July 1996.

##### The Evolving Intent of the Priority Corridors Program

The IVHS Act of 1991 states that IVHS Corridor funds shall be allocated to eligible State and local entities for application of intelligent vehicle-highway systems in corridors and areas where the application of such systems and associated technologies will make a potential contribution to the implementation of the Secretary's plan for the intelligent vehicle-highway systems program under section 6054 and demonstrate benefits related to any of the following: (1) improved operational efficiency, (2) reduced regulatory burden, (3) improved commercial productivity, (4) improved safety, and (5) enhanced motorist and traveler performance.

The initial perception of the Corridor Program's mission by many of the Corridor participants was directed at testing and deploying ITS technologies. For example, the Initial Program Plan for the Gary-Chicago-Milwaukee Corridor states, "The corridor will provide a national state-of-the-art testbed and showcase to support research, testing, evaluation, and

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<sup>\*</sup> Reference to the Priority Corridors Program hereafter will be to the existing Federal Program and its four Priority Corridors.

introduction of ITS technologies and systems.” Similarly, the I-95 Corridor Coalition Business Plan states that the Corridor goals are to: (1) enhance the capabilities of transportation agencies in the corridor to manage incidents, (2) cooperatively develop and assist in the operation of an interregional travel information network, (3) transform the I-95 Corridor into a showcase of IVHS technologies and establish the Corridor as a testbed to evaluate IVHS technologies as they evolve, (4) foster cooperative relationships among all involved transportation organizations to address information gathering and sharing, regional planning, joint procurement and joint funding, and (5) demonstrate to the public the benefits of IVHS and the partnership approach to addressing mobility needs.

One of the first tasks in each of the Corridors’ work plans was to develop a Corridor Business Plan. In that process, it became apparent that institutional building and cooperation among participating agencies would be necessary for inter-regional or even intraregional ITS deployment. Likewise, in the regional setting, the integration of existing and future ITS projects both within and across jurisdictional boundaries would be required to deploy corridor projects. As the Corridors have begun to roll out ITS, they have found that the Corridor’s primary role is to provide value-added synergies to various deployments by member agencies. Although similar stories are found in each of the Priority Corridors, examples of value-added projects and operating success stories directly attributable to Priority Corridor activities are noted in the Houston and the I-95 Corridor summaries.

## ***B. Summary of Individual Corridors***

### **Corridor- Specific Findings and Observations**

The four Priority Corridors were reviewed and compared along a number of dimensions, including: geographic scale, management structure; approaches to planning, programming, and operations; level of public-public and public-private partnerships; and funding priorities in terms of system elements and roll out.

In many ways, each Priority Corridor presents a unique experiment in developing arrangements to facilitate ITS deployment. As such, the individual experiences of the Priority Corridors provide an important starting point for considering overarching observations.

**Houston Corridor.** The most focused of the Priority Corridors is the Houston corridor. All ITS activities revolve around Houston TranStar, an integrated, transportation-management and emergency-response organization that is a joint venture of TxDOT, METRO (the regional transit agency), Harris County, and the City of Houston. TranStar is purely a management structure; all deployment work is performed by the four constituent agencies. The ITS infrastructure, including TranStar, was developed prior to receiving Priority Corridor funds. Houston is the least complex Priority Corridor to manage because there were only four key agencies involved and TranStar manages both planning and deployment of ITS, including all Priority Corridor activities. Because coalition-building and planning had been done while creating TranStar, the Priority Corridor emphasis was strongly upon deployment rather than planning. The Priority Corridor business plan was

used to expand and enhance existing ITS infrastructure, rather than to plan and build it, with major areas of investment being in Advanced Traffic Management Systems (ATMS) and Advanced Traveler Information Systems (ATIS).

The first Priority Corridor project (video surveillance of roadways serving the Astrodome) became operational in 1995 by using an innovative contracting approach to greatly shorten the typical procurement process. The Astrodome project was one of 14 projects in the Immediate Action Program (IAP), which are supported by \$8 million of Priority Corridor funds plus \$2 million of local funds and a small amount of private-sector funds. A total of 26 projects are currently programmed. Of the \$10 million in Corridor funds obligated, about \$1.6 million was spent on the two completed IAP projects (Astrodome video and IAP Plan).

Since Houston TranStar has deployed significant ITS infrastructure, tangible benefits and examples of interagency cooperation directly attributable to the Priority Corridors activities have been documented by TranStar staff. The Astrodome TV Surveillance System has enabled better traffic management and increased traffic flow while using fewer traffic operators during stadium events, according to Houston representatives. The leased TV Surveillance System allowed project implementation to be completed much sooner than with standard procurement procedures, and the leasing arrangement allows future flexibility to move field devices and to provide temporary service. Through the resources of the Priority Corridor activities, TranStar has been able to involve non-traditional partners in the deployment of the ITS infrastructure. Example projects stemming from Corridor activities and which add value to the Houston metropolitan ITS infrastructure are: (1) the Harris County Flood Control District, which manages the area's storm water system, is now a part of the TranStar system through integration of its Flood Alert System into the Transportation Management Center, (2) the City of Houston and Harris County Offices of Emergency Management are participating in a project that utilizes the TranStar system for management of hurricane evacuation, (3) based on experience from the TranStar Automatic Vehicle Identification (AVI) system, the City of Houston Fire Department has decided to equip fire and ambulance vehicles with Automated Vehicle Location (AVL) devices, which are expected to improve response time and vehicle productivity, and (4) the Uptown Community Improvement District (CID), a special tax district of private land owners, is contributing \$200,000 toward the implementation of advanced traveler information and traffic management in its suburban activity center.

Southern California Corridor. With many transportation stakeholders in the region, the Southern California Priority Corridor is regarded as large in scale and very complex in structure. As an institution created to generate the Corridor business plan and to be responsible for ITS deployment planning, the Steering Committee was built upon four preexisting regional teams and comprises members from the multitude of transportation stakeholders in the corridor region (e.g., regional and local agencies, Metropolitan Planning Organizations (MPOs), and the state transportation agency, Caltrans). The Steering Committee guides the Priority Corridor effort by incorporating ITS planning into the mainstream transportation decision-making process. Thus far, the Corridor's emphasis has been on the development of several plans: the Corridor-wide Plan; the four regional Early

Deployment Plans (Inland Empire, Los Angeles-Ventura, Orange, and San Diego), one Early Deployment Plan for the U.S.-Mexico border, and the Showcase project.

By encouraging agencies to talk to each other, by developing public-public partnerships, and by emphasizing planning, the Priority Corridor effort has been centered upon the *regional coordination and integration of systems*. Many places in Southern California have existing ITS infrastructure and thus the Corridor effort begins with a high level of infrastructure in place in many cities (e.g., Los Angeles, Santa Ana, Irvine, Anaheim) throughout the region. Although there are currently no Priority Corridor-funded operational projects, the Early Start projects embedded within Showcase are expected to be operational within the next year. The regional coordination and integration aspects of the Showcase project, a major transportation management and information system project, are expected to provide benefits by expanding the existing ITS system into additional areas of the corridor region, by providing multimodal benefits, and by connecting ITS projects in one area or city with another. The Southern California Corridor's emphasis is on developing ATMS, ATIS, and emergency response systems to provide an integrated multimodal, interregional transportation system. The Corridor effort has enhanced the construction of standards (*vis-a-vis* the National Systems Architecture effort and State standards in telecommunications) and technology transfer (i.e., one city learning from the systems integration experiences from another locale and thereby bypassing a developmental delay).

Gary-Chicago-Milwaukee Corridor. Including the metropolitan areas of Gary, IN, Chicago, IL, and Milwaukee, WI, the Gary-Chicago-Milwaukee (GCM) Corridor covers portions of Northwest Indiana, Northeast Illinois, and Southeast Wisconsin. The GCM Priority Corridor Coalition is directed by an Executive Committee that consists of Illinois DOT (IDOT), Indiana DOT (INDOT), Wisconsin DOT (WisDOT) and FHWA. Twenty-one additional participating agencies, including MPOs, transit operators, cities, and universities, are part of the Coalition. The Coalition is an institutional structure formed to provide communications among the participants, but contracting and operations remain with the participating agencies.

The GCM Corridor Coalition is organized into three committees: the Executive Committee, which comprises the chief administrative officer of the three DOTs and the FHWA Regional Administrator; the ITS Deployment (Technical) Committee, which comprises senior staff of the operating departments of all participating and ex-officio agencies; and the Coordination Work Group, which includes the ITS Program Manager from each State DOT and the FHWA Region 5 Urban Transportation Specialist. The ITS Deployment Committee has set up three task forces to handle specific projects. They are: the Architecture/Communications/Information (ACI) Group, the Traffic/Transit Management (TTM) Group, and the Commercial Vehicle Operations (CVO) Group.

In the past two years, the Priority Corridor's primary efforts have been the institutional building process and planning tasks. The GCM Priority Corridor emphasizes traffic, transit, and incident management in the Corridor region, placing the focus on the ITS elements of ATMS, ATIS, and transit. There were several ITS projects operating or under way prior to the Priority Corridor efforts including: IDOT Freeway Management program in the Chicago

area, Chicago Transit Authority (CTA), and Pace vehicle management (AVL) systems, ADVANCE project at IDOT (a field operational test using in-vehicle navigation and two way communications between the vehicle and the TMC), MONITOR project in Milwaukee (a freeway management system), Milwaukee County smart bus program and INDOT Borman Expressway Management project, and two incident response programs: IDOT Minutemen and INDOT Hoosier Helpers. The GCM Priority Corridor is planning to expand the geographic coverage of these systems, enhance the capabilities of these projects, and most importantly, connect the systems so that information databases and operational procedures of the participating agencies are compatible. The first project funded with Corridor funds, the Corridor Transportation Information Center (CTIC) project, which includes the Data Pipeline, the Information Clearinghouse, and the Gateway, is under way and being deployed in phases.

I-95 Corridor. The I-95 Priority Corridor extends from Connecticut on the north to Maryland on the south. However, the coalition of Priority Corridor States was expanded to include Maine to Virginia and now includes 42 agencies actively participating in the I-95 Corridor Coalition. The Coalition has created a structure that includes an Executive Board made up of the Chief Administrative Officers (CAOs) of each organization and a Steering Committee, which includes both policy and technical staff from each of the members. The Steering Committee established four Working Groups to better address specific issues. These groups include: Highway Operations Group (HOG), to deal with day-to-day operational issues; Functional Requirements and Technology Group (FRAT), to define the Corridor's technical needs and to identify the appropriate technology to deal with the requirements; Private/Public Sector Partnership Group, to address the sensitive issues of how these parties can best work together and their respective roles; and Budget and Policy Group, to address funding, programming, institutional, and related administrative policy issues that face the Coalition. A fifth Working Group, the CVO Working Group, was recently added to manage the CVO program.

The institutional building process needed to provide the necessary planning for the Priority Corridor consumed much of the past two years. The geographically large and organizationally very complex area required extensive effort to develop a manageable project process. The project efforts to date have been implemented based on the initial and three annual updates of the Corridor Business Plan and the Corridor Strategic Plan. Major efforts include the development and deployment of the Information Exchange Network (IEN), development of operating guidelines for incident management and surveillance requirements and technology assessment, a CVO study, a public/private sector outreach program, a user needs and marketability survey, traveler information implementation plan, coordinated Variable Message Sign (VMS)/Highway Advisory Radio (HAR) operating strategies, a technology exchange and training program, a targeted long-distance intermodal outreach program, a set of coordinated AVI/ETTM (Electronic Toll and Traffic Management) operating strategies, and a rural Mayday/800 call-in system study. Within the past year, the first major deployment, the IEN, has come on-line in phases. The IEN is now functioning in all twelve Corridor States with over 40 workstations installed. The

TruckDesk project, a major CVO traveler information project, has recently been initiated. A Corridor Traveler Advisory Map has been distributed for the past two years.

*Nut* participating operationally in the large number of local ATMS/ATIS projects under way in the Northeast, the I-95 Priority Corridor has placed the prime emphasis on local agency coordination to improve interjurisdictional and interregional travel within the corridor region. The focus has been on CVO traffic and providing traveler information to long-distance travelers on several modes. Since the focus is on long-distance travel, the Coalition's role in the ITS world is to provide an institutional structure for data and information sharing and operational cooperation, to provide integration of ITS projects deployed by member agencies, and to add value to the ITS programs and projects of individual agencies beyond their jurisdictional reach. The day-to-day fulfillment of that role is exemplified by activities related to an incident that occurred on March 13, 1996, in Philadelphia, PA on I-95. A major fire caused structural damage to the elevated roadway and closed I-95 for several days. Pennsylvania DOT immediately contacted TRANSCOM, the Coalition's Interim Communications Center, which in turn coordinated implementation of incident management and diversion plans hundreds of miles from the incident. The Coalition members report that the Priority Corridors activities fostered interagency coordination and corridor planning that: 1) created a consensus-driven environment among the operating agencies providing corridor-wide knowledge of agency operating plans and resources that was most useful in responding to the incident; 2) established more effective communications channels through the working relationships in Corridor activities and improved technology like the IEN; and 3) coordinated the use of existing ITS technology, such as HAR and VMS, to provide timely traveler information throughout the Corridor. According to Coalition members, the working relationships established through the Priority Corridors activities expedited the implementation of incident management and, in turn, significantly reduced the impact of the incident, not only in the Philadelphia area, but for hundreds of miles along the I-95 Corridor. The Coalition has also stated that current and future planned Corridor projects will further enhance communications and incident management capabilities and will support incident management activities at the regional level.

### ***C. Synthesis of Experience***

#### Corridor Comparisons and Issues

A comparison of the four Priority Corridors along several identified key dimensions demonstrates some similarities and differences among the corridors. The key dimensions evaluated in this report include geographic scale, management complexity, emphasis on planning to date, emphasis on deployment to date, partnerships between public agencies, public-private partnerships, major system elements emphasis, and a Corridor's role with existing ITS projects, as well as initial deployment roll out date. These similarities and differences raise the key cross-cutting institutional issues found in the Priority Corridors experience. These cross-cutting lessons include corridor project management, level of



agency management support, role of the MPO, level of procurement problems, outreach achieved to date, and benefits achieved to date.

**Corridor Similarities and Differences.** The Priority Corridor business plans share a number of similarities and differences. One major area of variability was the extent to which the Priority Corridors activities emphasized the planning process or deployment, with two (i.e., California, GCM) stressing the former and two (I-95, Houston) stressing the latter. All Priority Corridors achieved positive demonstrations of public-public partnerships and only a modest level of public-private partnerships. While there was a widespread view that the systems being considered and programmed by the Priority Corridors would facilitate inter-regional (or in the case of Houston, intraregional) travel, all were cognizant of the fact that most of these systems had not yet been deployed, but rather were in the planning and/or programming phase with roll outs expected over the next two years.

**Cross-cutting Lessons.** The descriptive comparisons for the four Priority Corridors revealed several issues common to the Priority Corridors Program as a whole. The *project* management used in each Corridor project made a difference in the project and tasks completed to date, with the use of management staff and upper-level management support also being an important factor in keeping momentum (lesson 1). The *role of the MPO* has wide variation in the four Priority Corridors, with positive results for integration into the regional planning process, where it has been tried (lesson 2). Delays due to *procurement problems* have been fairly widespread, increasing the value of innovative mechanisms to overcome potentially debilitating delays (lesson 3). There have also been limitations in using the private sector and in achieving inter-modal participation, and this result has served to highlight *the importance of enhancing outreach* (lesson 4). The most significant issue revealed by this assessment is that the major focus of most of the Priority Corridors to date has been *institutional building and system integration* with less emphasis on technology development and implementation than originally envisioned (lesson 5). There appears to be a consensus among the Corridor Program participants that the depth and sustainability of agency cooperation, the integration of various ITS projects, and the synergies created by the Priority Corridor Program would not have been accomplished without dedicated Federal support. Tables 1 and 2 on the following pages describe the similarities and differences among the four Corridors and address the key institutional issues.

### Corridor Challenges

Based on the review (and including the aforementioned lessons), a number of challenges confront the four Priority Corridors as they seek to institutionalize and normalize their roles. These challenges include demonstrating the value of regional institutional building, demonstrating the benefits of system integration and deployment, demonstrating the value-added synergies inherent in regional ITS programs, and instilling regional leadership and maintaining momentum.

**Demonstrating Value of Regional Institution Building.** At this point in time, the primary added value of the four Priority Corridors to the ITS effort is in their emphasis on *regional coordination and integration*. When the Priority Corridors Program was planned,

it was a reasonable expectation that the program would serve to showcase technology within the corridor area. However, the Priority Corridors Program has evolved into a program following this assertion: in order to showcase technology regional in scope, planning and programming efforts must *precede* any *regional* technology deployment.

Table 1. Comparative Description of the Four Priority Corridors  
Along Key Corridor Dimensions

Corridor Dimension	Houston	Southern California	GCM	I-95
Geographic Scale	Small	Large	Medium to Large	Very Large
Management Complexity	Simple	Very Complex	Complex	Very Complex
Emphasis on Planning (to date)	Low	High	High	Medium
Emphasis on Deployment (to date)	High	Low	Medium	Medium to High
Public-Public Partnerships	High	High	High	High
Public-Private Partnerships	Low	Low	Low	Medium to Low
Major System Elements: Emphasis	ATMS ATIS Transit	ATMS ATIS Emergency Response	ATMS ATIS Transit, Incident Management	CVO Interregional Travel, Incident Management ATIS, ETTM, Intermodalism
Role with Existing ITS Projects	Expand Enhance	Expand Connect	Expand Enhance Connect	Enhance Connect
Initial Deployment Rollout	1995	1997	1996	1996

Table 2. Key Institutional Issues in the Four Priority Corridors

<b>Institutional Issue</b>	<b>Houston</b>	<b>Southern California</b>	<b>GCM</b>	<b>I-95</b>
Corridor Project Management	Corridor and Agency Staff, Academic Assistance	Agency Staff	Consultant, Agency Staff	Consultant, Corridor Staff
Level of Agency Management support	High	Medium	Medium	High
Role of MPO	Medium	High	High	Low
Procurement Problems	Low	High	Low	Medium
Outreach to Date	Low	Low	Medium to Low	High
Benefits Achieved to Date	Technology Deployment	Institutional Building, System Integration	Institutional Building, System Integration	Institutional Building, System Integration

Institutional (or coalition) building has substantial value on its own terms. The creation of the communications channel and organizational framework among the numerous agencies is an added benefit, a necessary and beneficial product of the Priority Corridors Program, both for routine evolution of transportation system improvements and for responses to emergencies. The Corridors are facilitating the introduction of ITS into the mainstream transportation planning and programming process within the local MPOs and can be considered models for the rest of the nation. However, the value of cooperative performance is not always immediately visible, and the challenge falls upon each of the Priority Corridors to continually document, demonstrate, and communicate successes.

Demonstrating the Benefits of Systems Integration and Deployment. In a related sense, the regional system benefits are not immediately noticeable or easily apparent. By definition, the Priority Corridor Program effort seeks to promote the development of a seamless, multimodal, interjurisdictional transportation system, one that is not tangibly noticeable. Integration and coordination of systems in order to establish a regional system are complex technological solutions, take time, and may be the more significant and lasting outcomes over time in comparison with individual project deployment. The Priority Corridor business plans contain significant projects that will have both regional and local impacts. Corridor projects cause local and regional agencies to look for benefits through integration of systems, cooperation, and information sharing that extend beyond their jurisdictional boundaries. Given the importance of systems integration in Corridor projects,

the Priority Corridors are laboratories for the nation to test and develop new technologies, systems approaches (such as architecture and standards), and implementation strategies. Corridor projects are likely to represent complex institutional and technology solutions to transportation problems, while single jurisdictional projects tend to be more demonstration-oriented, which often fail to have widespread application.

**Demonstrating the Value-Added Synergies Inherent in Regional Systems.** Regional ITS projects inherently enhance both existing projects deployed by individual agencies and future projects to be deployed. The Corridor programs have emphasized the linking, leveraging, and coordination of ITS deployments by participating agencies. Corridor programs have also established various ITS markets for the public and private sectors and reached out to other transportation modes and related agencies such as enforcement. Programs such as cooperative operating strategies provide an increased knowledge base for participating agencies (especially agencies implementing new projects) and also provide a common message set that increases the traveler's understanding of the traveler information system in the corridor. The information-sharing aspects of these regional ITS projects provide technology transfer, which greatly reduces learning curves for agencies ready to embark on deployment of new technologies, in addition to providing for seamless operations and traveler information across jurisdictional boundaries.

**Instilling Regional Leadership and Maintaining Momentum.** Buy-in from stakeholders is necessary to achieve regional cooperation and, by extension, regionwide benefits. Incentives must be provided to engage all stakeholders to work together over an extended period of time. The next step, which has been initiated in several Priority Corridors, is to create strong ownership at the local level, especially among high-ranking officials. For example, similar to the high CEO-level support of the activities in the Houston and I-95 Corridors, more upper-level management support is needed in the Southern California and GCM Corridors and will likely occur as project deployment increases. *Similarly, further efforts to ensure an intermodal approach and private-sector involvement are needed.* Both of these constituencies should be a key part of the Priority Corridor approach and have yet to be made so. In short, the challenge is to use the opportunity of the Priority Corridors Program to develop a constituency that perceives sufficient value to sustain corridor-area elements beyond the horizon of the Federal program.

#### ***D. Policy Implications***

The widespread sentiment from those who have been involved in the Priority Corridors Program is that unique niches are being filled by the program. A range of productive activities are being conducted that would not have occurred without the Priority Corridors Program. The review revealed several roles that appear to be emerging, and these are as follows.

## The Role of the Priority Corridors in Interregional vis-a-vis Intraregional Deployment

The Priority Corridors Program demonstrates the value of system integration and institutional building in both inter-regional and large intraregional ITS deployment. Scale is a defining issue in the Priority Corridors Program, as it can affect both system and institutional orientation. For example, the expansive scale of the I-95 Corridor points toward an inter-regional travel and commercial focus, while at the other end of the spectrum, the smaller scale Houston Corridor focuses on intraregional ATMS coordination. These case studies raise the issue of *level of functional integration* (i.e., what is being integrated and at what level?). As one goes higher in scale, integration and institutional building becomes harder, yet the need to integrate is greater, since there are fewer incentives for local agencies to be involved (i.e., to locals, the program is abstract and more conceptual, and thus it is difficult to articulate the benefits to constituencies in their jurisdictions). One policy issue to consider is whether a certain level of scale should be recommended, or whether the issue of appropriate scale should be left to the region to decide.

## The Role of the Priority Corridor Program in Implementing Architecture and Standards

The Priority Corridors have been national leaders in the development of ITS standards. The Priority Corridor effort raises the issue of the development of standards that extend beyond the regional level (e.g., state standards, the National System Architecture Standards). In its attempt to develop regional standards, the Southern California case can be seen as the driving force for the integration of the National Systems Architecture effort as well as for state standards in the telecommunications field. Similarly, the I-95 Corridor has been very active in creating and forwarding the National Transportation Communications for ITS Protocol (NTCIP) for traffic control integration, and the GCM Corridor is active in the development of national standards for geographic referencing. While the choice of public versus private development of the communications backbone architecture is a complex issue and is under active discussion in the Houston Priority Corridor, all Priority Corridors can be seen as having to take an active role in developing standards and designs which address public versus private sector roles in communications as well as in information service provision.

## The Role of the Priority Corridors in Promoting Efficient Technology Transfer

The Priority Corridors effort provides an opportunity to develop an effective technology/knowledge transfer process and, by extension, a procurement mechanism. This review suggests that the Priority Corridor Program provides an opportunity for the efficient transfer of technology and services within each corridor area and thus provides an opportunity to leapfrog the developmental lag experience. For example, in Southern California, Orange County is experimenting with establishing a traveler information system. Lessons learned from this experience can be directly transferred to other counties and cities or as in Houston from one department to another within a jurisdiction and thus provide a technology transfer

mechanism whereby the learning curve for installing and operating a new technology is bypassed. The I-95 Corridor Coalition has a project for technology transfer and program support set up to help member agencies in implementing emerging technologies and standards. Technology transfer raises the procurement issue, because state agencies do not have good procurement processes for ITS projects. The Priority Corridor effort can be seen as an innovation that highlights the need to develop new procurement processes to fit deployment for ITS projects.

#### The Role of the Priority Corridors Program within ISTEA

The Priority Corridors Program requires greatly expanded cooperation in several dimensions-across political jurisdictions, across modal boundaries, and across functional responsibilities (e.g., transportation management, emergency response). It is one of several major ISTEA initiatives that, by their nature, require an unprecedented level of interorganizational cooperation. The Priority Corridors Program, along with other ISTEA programs, like the Congestion Management System, endeavors to make the *entire* transportation system work more efficiently, as a unified whole. In this context, the portion of the \$22 million that was spent for institution-building can be viewed as a modest capital investment to build a foundation upon which the remaining \$48 million Priority Corridor Program, the \$100 million intelligent transportation infrastructure program, and other major ISTEA investments can be constructed.